

The Place of ICT (Information and Communication Technology) in the Administration of Secondary Schools in South Eastern States of Nigeria

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This study aimed at identifying the role of ICT (information and communication technology) in school administration and the extent of its application by secondary school principals in administration. To guide this study, two research questions were answered and two null hypotheses were tested. The design of the study was a descriptive survey design. The population comprised all the 30 schools in the south eastern states, comprising Abia, Anambra, Ebonvi, Enugu, and Imo states with ICT and Internet facilities. There was no sampling since all the 30 principals from the five states were used for the study. A 26-item questionnaire was constructed and used for data collection. Means and *t*-test statistic were used for data analysis. The findings showed among others that the use of ICT in school administration is a necessity and worthwhile venture especially in this era of globalization, but the extent of their application in secondary schools is very slow as school administrators are incompetent in handling ICT facilities for effective administration of schools.

Keywords: ICT, administration, secondary schools, Nigeria

Introduction

ICT (information and communication technology) in its widest sense is technological tools and resources used to communicate, create, organize, disseminate, store, retrieve, and manage information (Obi, 2002; Nwachukwu, 2004; Edefiogho, 2005; Chaka, 2008). ICT does not only mean computers. It has to do with technological tools which according to Chaka (2008) include computers, the Internet, broadcasting technologies (radio and television), and telephone. This implies that ICT is a combination of computer and telecommunication application.

ICT has contracted the world into a global village and as such has been recognized to be a vital tool for solving communication problem world over.

According to European Commission (1995), G8 Nations (2000), Leach and Moon (2000), and Gusen (2001), ICT has proved to be a very powerful tool in education reform.

Based on this, institutions in the last few years have been reviewing their mission, goals, strategies, and operations in order to position themselves more effectively to meet the challenges of the 21st century.

Therefore, in this world of wide knowledge movement, education which is perceived generally as an instrument par excellence for effecting social challenges through inculcation of rightful values, skills, attitudes, and knowledge should be at the forefront of this movement. Nigerian institutions, of which secondary education is one, must become active members of this global movement in order to meet the challenges of this modern era.

The success of any system of education is hinged on proper planning, adequate financing, and efficient administration (FRN (Federal Republic of Nigeria), 2004). Without efficient and effective school administration, the aims and objectives of any educational system cannot be achieved. As ICT is sweeping through the global world, there is the need for Nigeria and her educational administrators to keep abreast of the principles and applications of ICT for effective job performance. The school administrator must be up to date in the provision of the right information and enhancement of teaching and learning.

The National Policy on Education (FRN, 2004, p. 18) outlined eight objectives of secondary school education as follows:

- (1) Provide trained manpower in the applied science, technology and commerce at sub-professional grades;
- (2) Inspire students with a desire for self-improvement and achievement of excellence;
- (3) Provide technical knowledge and vocational skills necessary for agriculture, industrial, commercial and economic development;
- (4) Provide all primary school leavers with the opportunity for education of a higher level, irrespective of sex, social status, religious or ethnic background;
- (5) Offer diversified curriculum to cater for the differences in talents, opportunities and future roles;
- (6) Develop and promote Nigerian language, art, and culture in the context of world's cultural heritage;
- (7) Foster national unity with an emphasis on the common ties that unite us in our diversity.
- (8) Raise a generation of people who can think for themselves, respect the views and feelings of others, respect the dignity of labor, appreciate those values specified under the broad national goals, and live as good citizens.

To achieve the above objectives, the secondary school administrator has a crucial role to perform in the achievement of the goals of education and his/her performance determines the success or failure of the educational plan in his/her school. For instance, the objective of provision of trained manpower in the applied science, technology, and commerce cannot be achieved without keeping abreast with ICT appliances. An uninformed school administrator cannot provide and update information. According to Cussack and Sckiller in Oboegbulem and Ogbonnaya (2008), there have been increasing changes for administrators in the areas of leadership expectation, work demands, schools and personal accountability, human resources management, decision-making communication, power and authority, and planning. These changes demand that the school administrator must be computer literate to cope with the demands on him/her.

In today's world, ICT can increase school efficiency and reduce unnecessary bureaucracy in school administration. With ICT, the secondary school head can discharge his/her duties by using computers and Internet in solving school general problems and in carrying out his/her day-to-day assignment especially as it relates to having a reliable information system in a laptop computer. ICT can play a major part in diminishing the work load of the administrator and his/her staff especially in keeping daily records of students, in analyzing students' attendance records, and in marking students' scripts and recording results. Through this, much time is saved and utilized in other directions for effective school administration.

Despite the above roles, ICT can play for the school administrator, one wonders if ICT is utilized in secondary schools in south eastern states. Besides, the FRN (2004, p. 34) in National Policy on Education made it clear that "Government shall provide necessary infrastructure and training for the integration of ICT in

advancing knowledge and skills in the modern world". It is assumed that if government policy has been implemented, administrators, teachers, and students in school system must have acquired ICT skills which will help them for effective instructional delivery, facilitation of teaching and learning as well as general administration of schools. No wonder Iwiyi (2007) pointed out that computer acquisition and use is an important aspect of teaching and learning process. The researchers are also of the view that this will be a means for effective administration of schools to meet the challenges of the 21st century.

Therefore, the purpose of this study is to determine the roles ICT can play in the administration of secondary schools and extent of its application in secondary school administration.

Research Questions

The research questions of this study are as follows:

Q1: What roles can ICT play in the administration of secondary schools?

Q2: To what extent are these roles applied in secondary schools?

Hypotheses

The hypotheses of this study are as follows:

Ho1 (null hypothesis 1): There is no significant difference ($P < 0.05$) between the mean ratings of principals in urban and rural schools with regards to the roles of ICT in administration of secondary schools in south eastern states;

Ho2 (null hypothesis 2): There is no significant difference ($P < 0.05$) between the mean ratings of principals in urban and rural schools with regards to the extent of use of ICT in the administration of secondary schools in south eastern states.

Method

Population

The population of this study comprised 30 principals in the 30 schools in the south eastern states with ICT and Internet facilities. The schools were stratified in urban and rural areas. Based on this, a total of 20 urban and 10 rural schools participated in the study.

Sample Size

There was no sampling since the population is small. As a result, all the 30 principals in both urban and rural areas from the five states Abia, Anambra, Ebonyi, Enugu, and Imo State were used for the study.

The study adopted a descriptive survey design. The instrument for data collection was a 26-item researcher developed questionnaire titled "PIASS (The Place of ICT in Administration of Secondary Schools)". The instrument was made up of two parts. Part one sought information regarding the state and name of the school. Part two comprised 26 items in two clusters in which the respondents were requested to indicate their opinions on a 4-point rating scale of 4—"SA (Strongly agree)", 3—"A (Agree)", 2—"D (Disagree)", and 1—"SD (Strongly disagree)" for cluster one and 4—"VH (Very high)", 3—"H (High)", 2—"L (Low)", and 1—"VL (Very low)" for cluster two.

The instrument was face validated by three experts in the Department of Educational Foundations and one in Measurement and Evaluation all in University of Nigeria, Nsukka. The questionnaire was also trial tested using 10 principals in the south eastern states. Cronbach's alpha was used to test internal consistency of the

items. The items yielded a coefficient of 0.87 and 0.83 respectively for the two clusters.

The copies of the questionnaire were administered to the respondents with the help of five trained research assistants. Mean and *SD* (standard deviation) were used to answer the two research questions while *t*-test statistic was used to test the null hypotheses at 0.05 level of significance.

Result

Q1: What Roles Can ICT Play in Administration of Secondary Schools?

The data in Table 1 showed that both groups of principals rated the 14 items in the first cluster high as roles that ICT can play in the administration of secondary schools in the south eastern states of Nigeria. This implies that with the use of ICT in secondary school administration, the principals will be able to store lasting information that can be updated in personal data of staff/students, make returns, write and dispatch mails, browse the Internet for up to date information, keep confidential information secret, carry out WASCE (West African School Certificate Examination)/NECO(National Examination Council) online registration of students, deliver interesting papers during workshops/seminars using power point display, communicate with other colleagues in other parts of the world, among others.

Table 1

Mean Ratings of the Respondents on the Roles of ICT in Administration of Secondary Schools

S/N	Item	Urban principals (N = 20)				Rural principals (N = 10)			
		Mean	\bar{X}	SD	Dec.	Mean	\bar{X}	SD	Dec.
1	Use of computers offers a principal a better means for storing lasting information that can easily be updated on personal data of staff/students	3.84	0.55	SA	3.78	0.52	SA		
2	ICT facilities offer an easier means for a school head to make returns, write and dispatch mails	5.59	0.48	SA	3.52	0.45	SA		
3	With the use of computers and computer networks an administrator can easily browse the Internet for up-to-date information	4.00	0.00	SA	4.00	0.00	SA		
4	ICT provides a better way for the school heads in storing inventory of school properties that can be updated at any point in time	3.70	0.41	SA	3.65	0.40	SA		
5	With the use of computers, administrators can easily keep confidential information secret	3.80	0.40	SA	3.74	0.38	SA		
6	Designing/Printing of students' results is easier done by an administrator through the use of computers	3.37	0.60	A	2.78	0.70	A		
7	Wide knowledge of latest happenings is gotten by school heads through listening to radios/TV in his/her office	4.00	0.00	A	4.00	0.00	SA		
8	School heads communicate widely and get information from colleagues in other parts of the world with the use of telephone, e-mail, and fax	4.00	0.00	SA	4.00	0.00	SA		
9	With computer and computer networks the school heads find it easy to carry out WASCE/NECO online registration of students	4.00	0.00	SA	4.00	0.00	SA		
10	Through the use of ICT administrators can deliver interesting papers during workshops/seminars using power point display	3.62	0.56	SA	3.55	0.50	SA		
11	With skill in computer acquisition an administrator can retrieve information for decision-making	3.87	0.35	SA	3.66	0.40	SA		
12	With ICT administrators have easier access in collating results of the students in Micro-soft Excel	3.58	0.42	SA	3.55	0.50	SA		
13	The use of computers allows for maintenance of accuracy in school records especially in the area of continuous assessment	3.83	0.37	SA	3.77	0.35	SA		
14	The use of computers allows for easy storage/retrieval of students' reports	3.69	0.45	SA	2.96	0.42	A		
	Cluster mean	3.78	0.33	SA	3.64	0.33	SA		

Q2: Extent of Use of ICT in Secondary Schools

On the other hand, Table 2 which shows the extent of use of ICT, is rated low in the most of the items except in items 16, 20, and 22 which are rated high by both groups of respondents. By implication, most of the principals do not use the ICT facilities available to them to store lasting information on personal data of staff/students that can be updated, browse the Internet for up-to-date information, design/print students' results, deliver papers using Micro-soft power point display, and maintain accurate aids in continuous assessment of students, among others.

Table 2

Mean Ratings of the Respondents on the Use of ICT in Administration of Secondary Schools

S/N	Item	Urban principals (N = 20)			Rural principals (N = 10)				
		Mean	\bar{X}	SD	Dec.	Mean	\bar{X}	SD	Dec.
15	Storing lasting information that can be updated on personal data of staff/students	1.65	0.48	0.48	L	1.55	0.51	0.51	L
16	Making returns, writing and dispatching mails	3.86	0.54	0.54	VH	3.80	0.45	0.45	VH
17	Browsing the Internet for up-to-date information	2.07	0.38	0.38	L	1.44	0.35	0.35	VL
18	Storing inventory of school properties that can be updated at any point in time	2.26	0.50	0.50	L	2.02	0.35	0.35	L
19	Designing/printing of students' results	1.43	0.38	0.38	L	1.40	0.30	0.30	VL
20	Getting knowledge of the happenings in the world through radio/TV	3.79	0.41	0.41	VH	3.63	0.40	0.40	VH
21	Communicating and getting information from colleagues in other parts of the world through Internet and e-mail	2.30	0.61	0.61	L	1.65	0.54	0.54	L
22	Registering students online in WASC/NECO registration	4.00	0.00	0.00	VH	4.00	0.00	0.00	VH
23	Delivering papers at workshops/seminars using Micro-soft power point display	1.42	0.30	0.30	L	1.25	0.27	0.27	VL
24	Retrieving information for prompt action in decision-making	1.44	0.36	0.36	L	1.22	0.30	0.30	VL
25	Maintaining accurate records in continuous assessment of students	1.67	0.38	0.38	L	1.42	0.35	0.35	VL
26	Using ICT for storage and retrieval of students' reports	1.40	0.52	0.52	VL	1.34	0.50	0.50	VL
Cluster mean		2.27	0.41	0.41	L	2.06	0.37	0.37	L

Data in Table 3 showed that the calculated *t*-value of 1.08 is less than the critical value of 2.05 at 28 degrees of freedom and 0.05 level of significance. This shows that there is no significant difference in the opinion of the groups. The null hypothesis is therefore accepted. Thus, there is no significance difference in the opinion of the groups.

Table 3

T-test Analysis of the Difference Between the Mean Scores of Principals of Urban and Rural Schools on the Roles of ICT in the Administration of Secondary Schools

Group	N	\bar{X}	SD	df	Level of significance	Calculated- <i>t</i>	Critical- <i>t</i>	Dec.
Urban principal	20	3.78	0.33			1.08	2.05	
Rural principal	10	3.64	0.33	28	0.05			Ho1 accepted

Data in Table 4 indicated that the calculated *t*-value of 1.40 is less than the critical value of 2.05 at 28 degrees of freedom and 0.05 level of significance. This shows that there is no significant difference in the opinions of the two groups. Therefore, the null hypothesis is accepted.

Table 4

T-test Analysis of the Difference Between the Mean Scores of the Principals of Urban and Rural Schools on the Extent of Use of ICT in the Administration of Secondary Schools

Group	<i>N</i>	\bar{X}	<i>SD</i>	<i>df</i>	Level of significance	Calculated- <i>t</i>	Critical- <i>t</i>	Dec.
Urban principle	20	2.27	0.41			1.40	2.05	
Rural principle	10	2.06	0.37	28	0.05			Ho2 accepted

Discussion

The opinions of the principals in research question one are that ICT plays the following roles in administration of secondary schools in the south eastern states. These roles include assisting the principals in storing lasting information that can be updated easily on personal data of staff/students, making returns, writing and dispatching mails, browsing the Internet for administrative improvement, keeping confidential information secret, designing/printing of students' results, registering students online for WASCE/NECO examinations, and gaining wide knowledge, among others. The finding shows that the roles of ICT in the administration of secondary schools were highly rated. This implies that secondary school administrators need ICT in their day-to-day running of schools, especially in the era of globalization where ICT education has become an important issue in Nigerian education. In line with this, Edefiogho (2005) made it clear that ICT increases the efficiency and effectiveness of educational management and administration. According to him, if managerial functions at school and other levels of the education system are to be carried out efficiently and effectively, it is necessary that information of high quality is available at all times for elective decision-making. No wonder that the principals for instance rated such items as storing lasting information, making returns/writing mails, retrieving information for prompt action in decision-making, among others, as important roles of ICT in administration of schools. Experience has also shown the researchers that use of ICT in schools provides for a reliable information system that will in turn guarantee the right information. Besides, ICT has the capacity to automate processes and save time, thereby freeing school managers to focus on instructional leadership. The point is that if a principal of a school for instance is to have all the necessary information about his/her school in a laptop, then, the running of his/her school will be made easier for him/her.

The extent of use of ICT in the administration of secondary schools was rated low in most of the items except in making returns, writing and dispatching mails, getting knowledge of happenings in the world through radios/TV, and registering students online for WASCE/NECO examinations.

This is an indication that the roles which ICT can play in the administration of secondary schools are yet to be applied by the principals in their day-to-day running of schools. Ibenye (personal communication, June 30, 2010) made it clear that the computers in her school residence in Abia State are just used for teaching students only. She indicated that she does not use the computers for administrative purposes like storing information about all the students in the school and designing/printing the students' results. Above all, she indicated that she is a computer illiterate. In line with this, Oboegbulem and Ogbonnaya (2008) stated that the inability of administrators to keep up with the pace of development in ICT is one of the constraints that have made it difficult for innovative use of ICT in the management and administrative process. It is worthy of noting that the indications of Ibenye is not farfetched from other principals of south eastern states with ICT facilities in their schools. It is only computer literate principals that will effectively and efficiently apply ICT in their day-to-day running of the schools and browse through the Internet for up-to-date information. This, therefore, shows why

the extent of use of ICT in administration of secondary schools was rated low in most of the items.

The result of analysis in Table 3 shows that the roles ICT can play in school administration do not differ significantly between urban and rural principals who have ICT facilities in their schools. With a calculated-*t* of 1.08 being less than the critical-*t* of 2.05 at 28 degrees of freedom and 0.05 level of significance, the null hypothesis is accepted.

The result of *t*-test in Table 4 shows that the extent of the application of the roles of ICT in the administration of schools does not differ significantly between urban and rural principals with ICT facilities in their schools. With a calculated value of 1.40 and critical *t*-value of 2.05 at 28 degrees of freedom and 0.05 level of significance, the null hypothesis is accepted.

Findings and Implication of the Research

The findings of this research identified the roles ICT could play in secondary school administration in south eastern states of Nigeria. It showed that ICT is minimally used by principals in the administration of schools. The findings are of importance to the government secondary school boards, policy-makers, administrators, and stake holders in education in the sense that in order to discuss issues in contemporary education, the principals as secondary school administrators must use ICT in their day-to-day management of the schools for effective and efficient performance. This study has also created awareness in the minds of principals of secondary schools on their current position in the application of ICT in daily administration of schools and the need for developing competency in the use of ICT appliances for effective administration of schools.

Conclusion

This study has identified the roles ICT could play in the administration of secondary schools in the south eastern states of Nigeria and the extent of use of ICT in secondary school administration by the principals. The roles include use of ICT by principals in storing lasting information on staff/students' personal data, browsing the Internet for up-to-date information, making returns/writing mails, registering students online for WASCE/NECO examinations, delivering interesting papers in workshop/seminars using power point display, communicating with colleagues in other parts of the world, and retrieving information for prompt action in decision-making, among others. ICT should be used by the principals for effective school administration.

Based on the discussions and implications of the study, recommendations are made.

Recommendations

The recommendations of the study are as follows:

- (1) Government should provide computers with Internet facilities to schools through secondary school boards;
- (2) State government should organize training for principals on the use of ICT in school administration;
- (3) State government should be in collaboration with secondary school boards to provide laptop computers to principals of schools;
- (4) Federal government should arrange for provision of ICT appliances in all secondary schools in south eastern states;
- (5) Secondary school boards should organize workshops/seminars at intervals for principals. In such workshops/seminars, the principals should be advised to come with their own lap tops.

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